

NT 06009
VKMA 06104
VKMA 06106
VKMC 06106

Renault

VKMA 06104

VKMA 06106

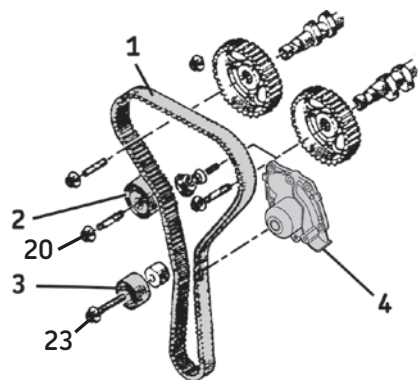
VKMC 06106



A

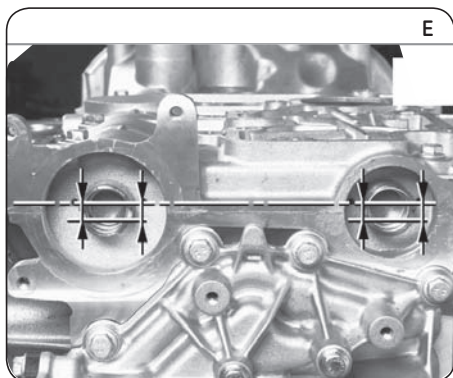


- (5): Engine securing tool (Renault Eng. 1453).
- (6): Crankshaft timing pin (Renault Eng. 1054).
- (9): Camshaft timing gauge (Renault Eng. 1496).

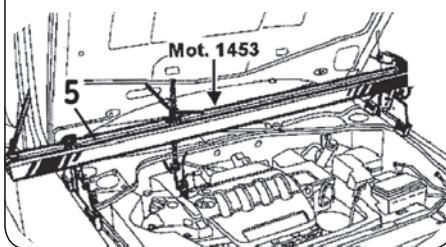


- (20): 7 Nm / 28 Nm
- (23): 45 Nm
- (24): 10 Nm

E



B



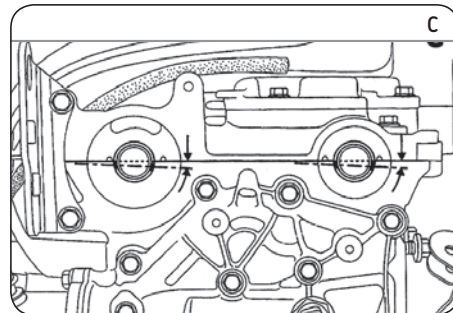
Removal

- 1) Disconnect the battery according to the vehicle manufacturing guidelines.
- 2) Prepare the vehicle for the timing replacement according to the vehicle manufacturing guidelines.
- 3) Remove the seal plugs/caps on the end of the camshafts.
- 4) Rotate the engine **clockwise** to position the grooves on the camshafts so that they are virtually horizontal and directed slightly downwards to the right (Fig. C).
- 5) Fit the crankshaft timing pin (6) and rotate the engine slowly and without jerking until the pin can be inserted in the crankshaft groove (7) (Fig. D).

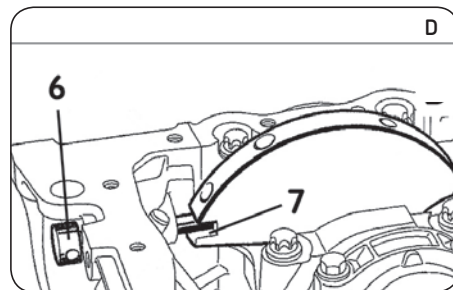
Note: Be careful not to insert the pin into a balancing hole

- 6) Check that the grooves on the camshafts are offset downwards and parallel to the cylinder head gasket surface (Fig. E).
- 7) Lock the flywheel and remove the crankshaft pulley (8) (Fig. F).
- 8) Remove the upper and lower timing casings.
- 9) Loosen the tensioner roller (2) fastening nut (20) to slacken the timing belt (1) (Fig. F).
- 10) Remove the tensioner rollers (2) and idler roller (3) (Fig. F).
- 11) Remove the timing belt and crankshaft sprocket.
- 12) **Remove the waterpump (VKMC 06106):** Firstly, Bleed the cooling circuit, check it is clean, and clean if required; then fully loosen the bolts securing the water pump (4) and remove it.

C



D



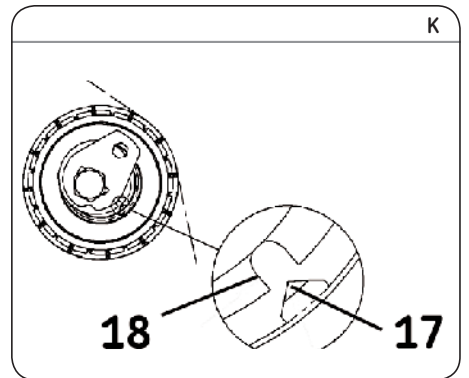
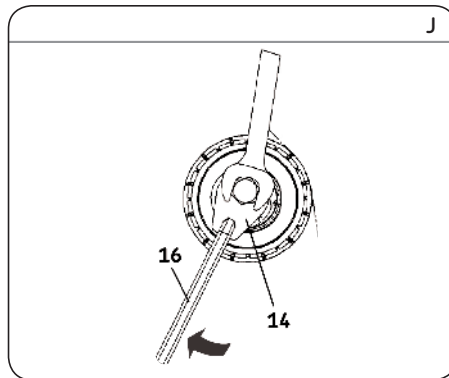
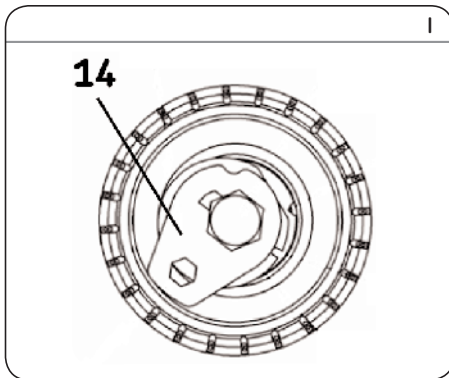
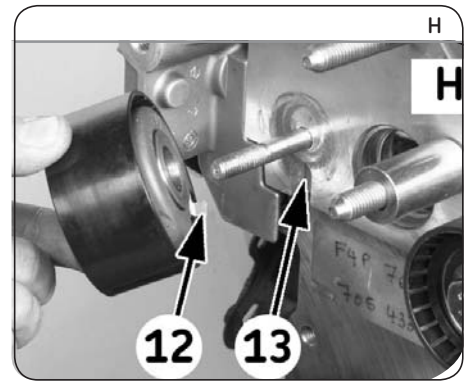
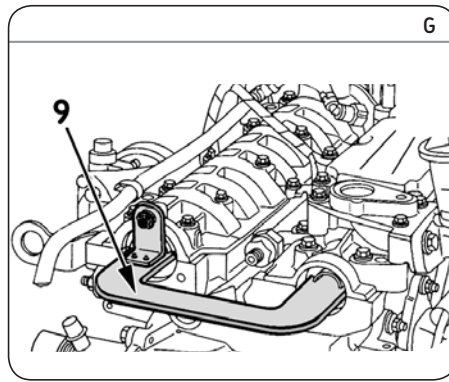
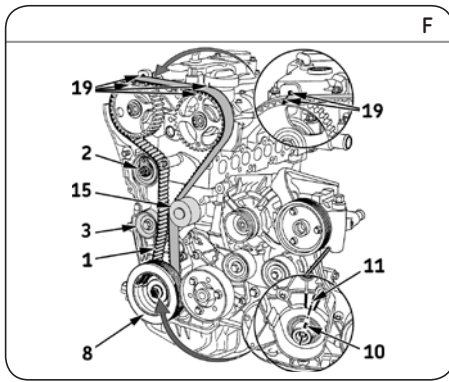
Refitting

Caution! First clean the bearing surfaces of the rollers.

- 13) **For VKMC 06106,** firstly fit the new water pump (4), apply the torque **10 Nm** to the waterpump bolts (24) and then check that the water pump pulley runs properly, and has no hard or locking spots.
- 14) Check that the engine is at TDC: position of the grooves (Fig. E) and pin (6) (Fig. D).
- 15) Fit the camshaft locking tool (9) (Fig. G).
- 16) Check that the groove (10) on the crankshaft is located towards the top and in the middle of the two ribs (11) on the engine casing (Fig. F)
- 17) Refit the new tensioner roller (3). Tighten the fastening bolt (23) to **45 Nm**.
- 18) Refit the new tensioner roller (2): fit the positioning pin (12) in slot (13) on the engine block (Fig. H). Turn the adjusting plate (14) until it reaches the "7 o'clock" position (Fig. I) and then slightly tighten the tensioner roller fastening nut manually.

Install Confidence





19) Refit the crankshaft sprocket.

Note: Degrease the end of the crankshaft (timing side) and the bore and sprocket (crankshaft) rear face before refitting.

20) Refit the timing belt (1) in the following order: crankshaft sprocket, water pump pulley (15), camshaft sprockets, idler roller (3) and tensioner roller (2) (Fig. F).

21) Tighten the timing belt (1): turn the adjusting dial (14) on the tensioner roller (2) **clockwise** using the Allen key (16), while holding the roller's fastening stud in position using a hex spanner (Fig. J). Continue turning the adjustment dial until the moving pointer (17) is aligned with the notch (18) (Fig. K). Then tighten the fastening nut (20) **7 Nm**.

22) Draw marks (19) on the camshaft sprockets opposite the marks on the rear casing (Fig. F).

23) Remove the timing pins (6) (Fig. D), and (9) (Fig. G).

24) Refit the crankshaft pulley.

25) Turn the crankshaft through two revolutions in the engine rotation direction. Before the two revolutions are completed, fit the timing pin (6) and continue to rotate the engine slowly and without jerking until the pin can be inserted in the crankshaft groove (7) (Fig. D).

26) Check that the marks (19) on the camshaft sprockets are aligned with the rear casing (Fig. F).

27) Check the tensioner roller setting: the moving pointer (17) must be aligned with the notch (18) on the tensioner roller (Fig. K).

28) If the marks are not aligned, remove the new timing belt and adjust the belt tension again, by returning to step 22.

29) Tighten the tensioner roller fastening nut (20) to **28 Nm**.

30) Check that the timing system is correctly adjusted:
– Refit the camshaft locking tool (9) without forcing (Fig. G). The grooves on the camshafts must be offset downwards and parallel to the cylinder head gasket surface (Fig. E).

Note: The timing system is set correctly when the camshaft locking tool can be easily engaged in the grooves.

31) If the camshaft timing gauge does not engage easily, remove the timing belt and repeat the operation to set the belt tension and timing system from step 22.

32) Remove the crankshaft timing pin (6) (Fig. D) and the camshaft locking tool (9) (Fig. G).

33) Fit the new sealing plugs/caps at the end of the camshafts.

34) Refit the remainder of the removed elements in the reverse order to removal.

35) Fill the cooling circuit with the permanent fluid recommended.

36) Check the circuit's leak-tightness when the engine reaches its running temperature and secure the level of coolant when the engine is at ambient temperature (20 °C).

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